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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,568	10/24/2005	Christoph Brabec	21928-018US1	2161

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EXAMINER	
INGHAM, JOHN C	
ART UNIT	PAPER NUMBER
2814	

MAIL DATE	DELIVERY MODE
01/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,568	BRABEC ET AL.	
	Examiner	Art Unit	
	JOHN C. INGHAM	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-12 and 14-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-12 and 14-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/14/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 October 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims **1, 2, 5, 6, 9-11 and 14-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sariciftci (US 5,454,880) and Kataoka (US 5,389,159).

5. Regarding claims **1, 2, 5, 6, 9-11, 14-15, 20 and 25**, Sariciftci discloses (col 5 ln 35- col 6 ln 17) a photovoltaic cell (abstract) and the method of production, comprising: a substrate (col 5 ln 36), a first positive electrode (conducting electrode layer, col 5 ln 40) applied to the substrate, a photovoltaically active layer (conjugated polymer, col 5 ln 47-col 6 ln 4) comprising an organic material, a second semitransparent electrode (conducting polymer, col 6 ln 9) made of an organic material and applied to the active layer, wherein the first electrode is between the substrate and the photovoltaically active layer, and the photovoltaically active layer is between the first and second electrodes.

Sariciftci does not specify leakage connectors disposed on the second electrode. Kataoka teaches that a grid of current-collecting electrodes (silver paste) are provided on a transparent electrode for efficient current collection (col 7 ln 61-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Kataoka on the device of Sariciftci for efficient current collection. This structure meets the limitations of leakage connectors as claimed.

6. Regarding claims **17 and 22 and 27**, Kataoka teaches the cell of claims 1 and 9 and the method of claim 6, wherein the leakage connectors are devoid of adhesive (conductive paste of silver, sputtered, col 7 ln 65).

7. Regarding claims **16, 18, 19, 21, 23, 24, 26, 28 and 29**, Kataoka teaches the cell of claims 1, 15 and 17, and the method of claims 6, 9, 20, 22, 25 and 27, wherein the leakage connectors are printed on the second electrode (col 8 ln 5).

8. Claims **7, 8 and 30-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sariciftci and Kataoka as applied to claims 1, 6 and 9 above, and further in view of Lamotte (US 6,746,751). Sariciftci and Kataoka do not specify wherein the second electrode comprises PEDOT and is applied by a printing technique. However, Sariciftci does disclose that the second electrode can be polyaniline.

Lamotte teaches that PEDOT is a suitable conductive polymer alternative for polyaniline when used as an electrode for a photovoltaic cell electrode (col 15 ln 33 and ln 54). Since the conductive polymers can be applied by printing (col 1 ln 30), they enable fabrications with higher flexibility (col 1 ln 33). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Lamotte on the cell electrode of Sariciftci and Kataoka in order to produce a device with higher flexibility. Replacing polyaniline with PEDOT would be obvious since the two materials are suitable conductive polymers for organic electrodes, art recognized suitability for an intended purpose has been recognized to be motivation to combine. MPEP 2144.07.

9. Claims **3, 12 and 32-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sariciftci and Kataoka as applied to claims 1, 6 and 9 above, and further in view of Forrest (US 6,692,820). Sariciftci and Kataoka do not specify wherein the second electrode is opaque and used as a positive electrode. Instead Sariciftci and Kataoka disclose that the second electrode is typically transparent, although Sariciftci does disclose that the upper contact may be opaque and cover only a portion of the device (col 6 ln 13).

10. Forrest teaches that in a photovoltaic device, one of the electrodes should be transparent to incident light and the opposite face electrode may be reflective (opaque). If the substrate is facing the incident light (photons), the substrate is also to be transparent. If the substrate is transparent (glass substrate disclosed by Sariciftci at col 5 ln 38) and exposed to incident light, then the first electrode as claimed will obviously be transparent (such as the ITO electrode disclosed by Sariciftci at col 5 ln 44) , and the opposite electrode may obviously be opaque (and used as a positive electrode). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teachings of Forrest on the device of Sariciftci and Kataoka in order to pass incident radiation into the photosensitive region (through the transparent substrate and transparent first electrode) and reflect unabsorbed light back into the photosensitive region (from the second opaque electrode) in order to concentrate radiation and increase power conversion efficiency (Forrest col 15 ln 60- col 16 ln 10).

Response to Arguments

11. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lorin (US 6,545,290) discloses polymers and electrodes that can be applied to photodiodes and photovoltaic components, illustrating that both are

analogous (col 1 ln 5-10). Lorin also discloses that the electrodes can be transparent or opaque depending on which side is facing incident light (col 9 ln 35-55).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN C. INGHAM whose telephone number is (571)272-8793. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Howard Weiss/
Primary Examiner
Art Unit 2814

John C Ingham
Examiner
Art Unit 2814

/J. C. I./